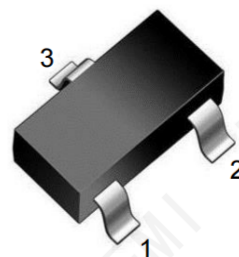


Features

- ◇ 200W(8/20 μ s) Peak Pulse Power
- ◇ High ESD Protection Level
- ◇ SOT-23 Thin SMD Package
- ◇ RoHS compliant
- ◇ Matte Tin Lead finish (Pb-Free)
- ◇ Protect Tw SM24CBW us Lines



SOT-23 top view

Applications

- ◇ DeviceNet
- ◇ Low and High Speed SM24CBW
- ◇ Smart Distribution Systems (SDS)
- ◇ Controlled Area Network – ESD 1.1 / ESD FD



Circuit Diagram

Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	± 25	kV
		± 25	
JESD22-A114-B ESD Voltage	Per Human Body Model	± 16	
ESD Voltage	Machine Model	± 0.4	
Peak Pulse Power	$P_{PP(2)}$	200	W
Peak Pulse Current	$I_{PP(2)}$	3	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	°C
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20 μ s exponential decay waveform according to IEC61000-4-5.

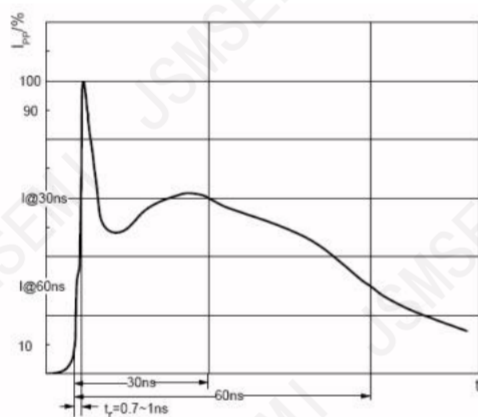
ESD standards compliance

IEC61000-4-2 Standard

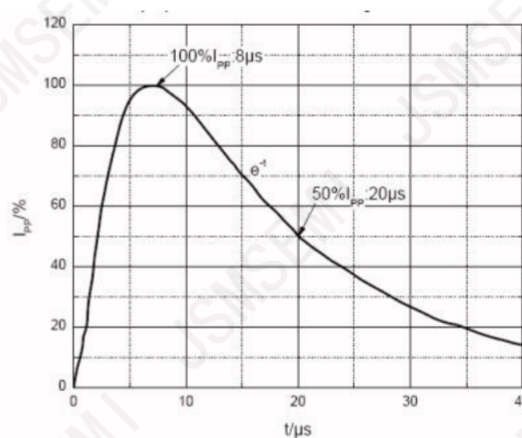
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999

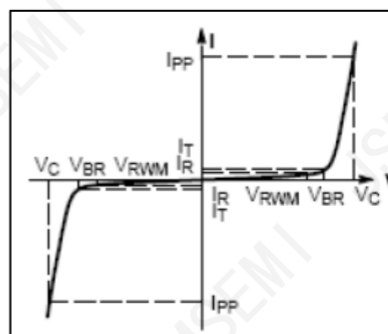


ESD pulse waveform according to IEC61000-4-2



8/20µs pulse waveform according to IEC 61000-4-5

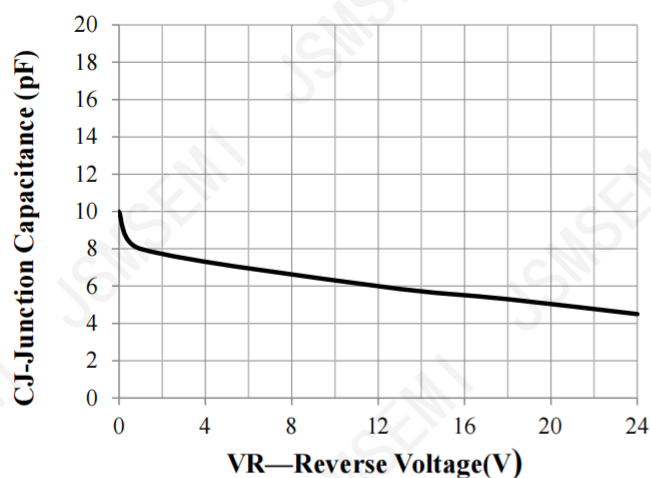
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage


V-I characteristics for a Bi-directional TVS

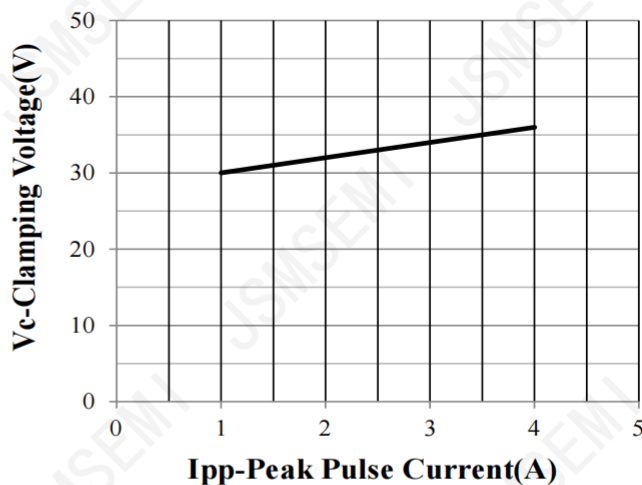
Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Peak Voltage				24	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	26.7	28	33	V
I_R	Reverse Leakage Current	$V_{RWM} = 24\text{V}$			1	μA
V_C	Clamping Voltage	$I_{PP} = 1\text{A} (8/20\mu\text{s})$		35	40	V
V_C	Clamping Voltage	$I_{PP} = 3\text{A} (8/20\mu\text{s})$		38	60	V
I_{PP}	Peak Pulse Current	$t_p = 8/20\mu\text{s}$			3	A
C_J	Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		20		pF

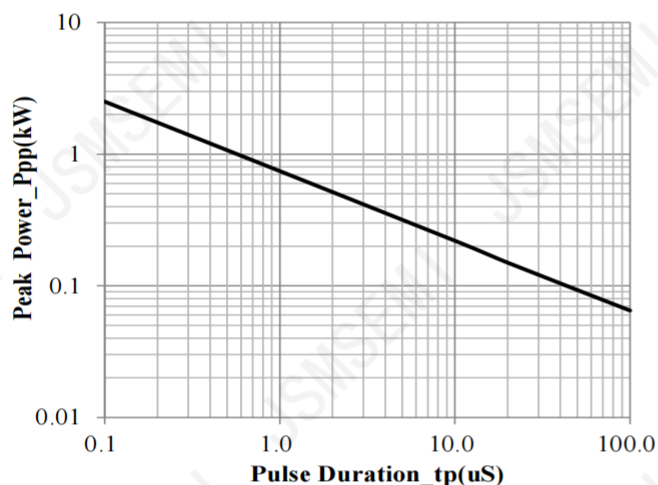
Typical Performance Characteristics (TA = 25°C unless otherwise Specified)



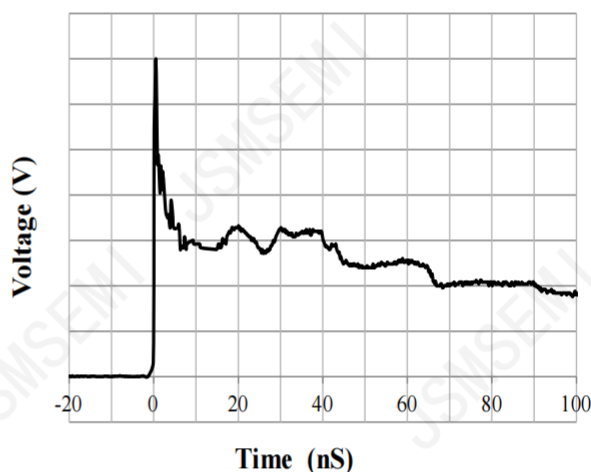
Junction Capacitance vs. Reverse Voltage



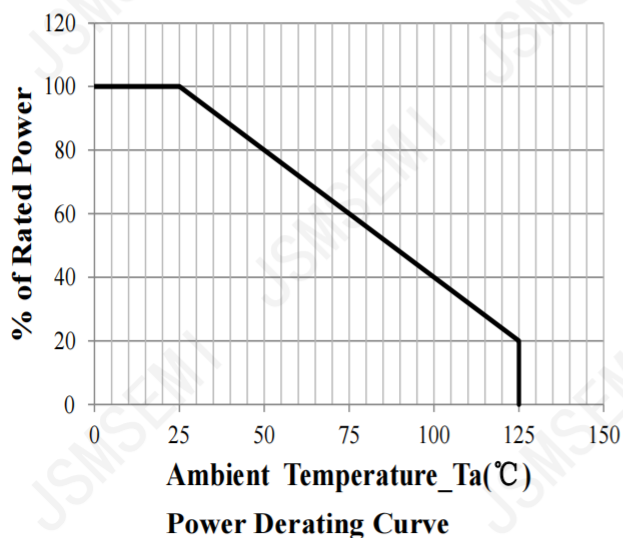
Clamping Voltage vs. Peak Pulse Current



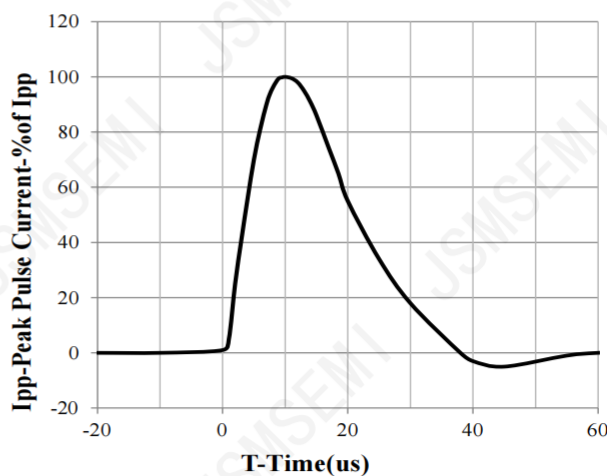
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



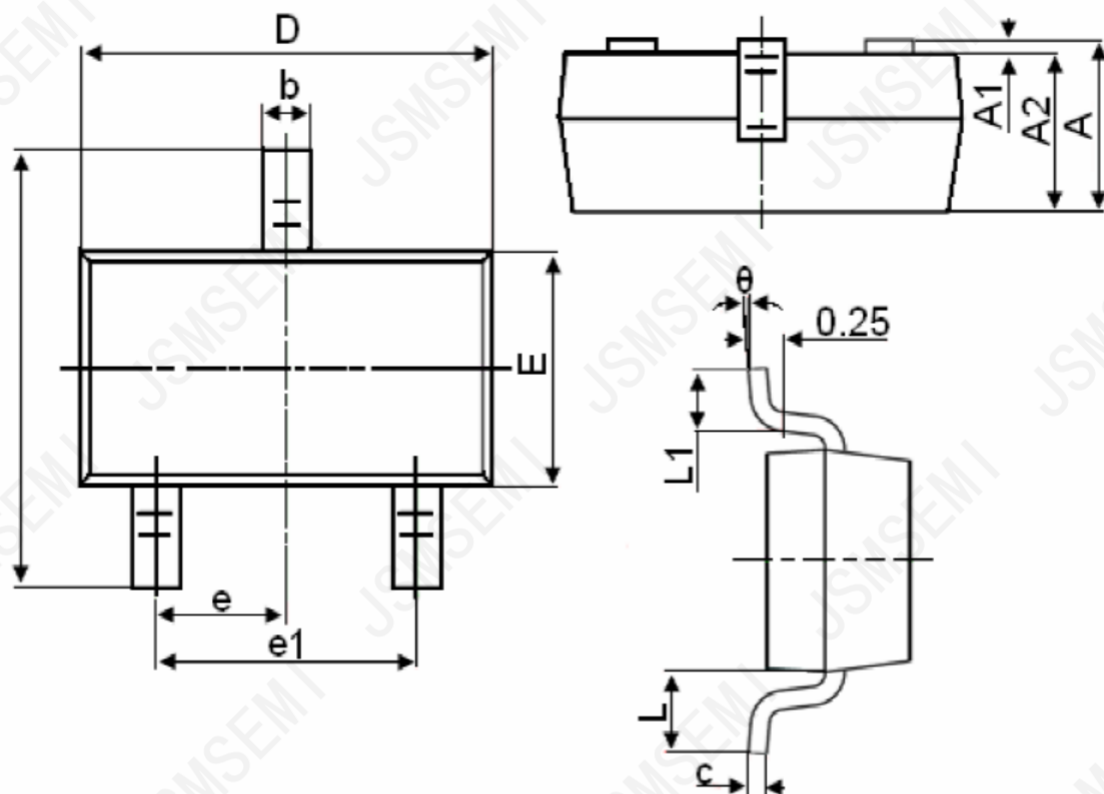
Power Derating Curve



8 X 20us Pulse Waveform

Package Information

SOT-23



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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